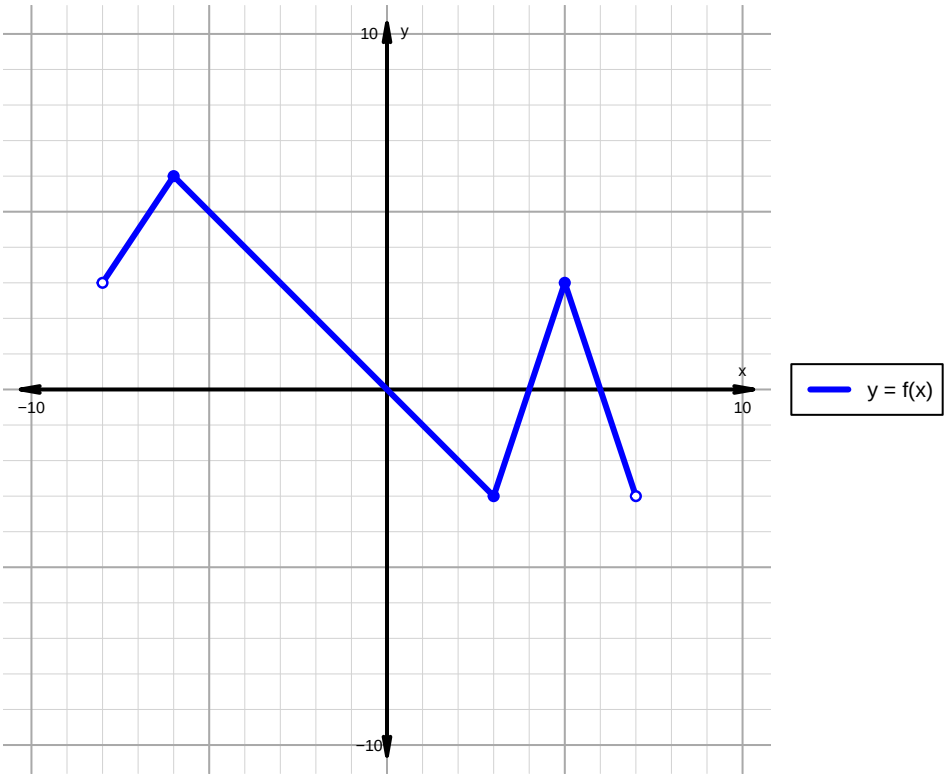
Name: Date:

Intervals, Transformations, and Slope Solution (version 30)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-8, 0) \cup (4, 6)$
Negative	$(0, 4) \cup (6, 7)$
Increasing	$(-8, -6) \cup (3, 5)$
Decreasing	$(-6, 3) \cup (5, 7)$
Domain	$(-8, 7)$
Range	$(-3, 6)$

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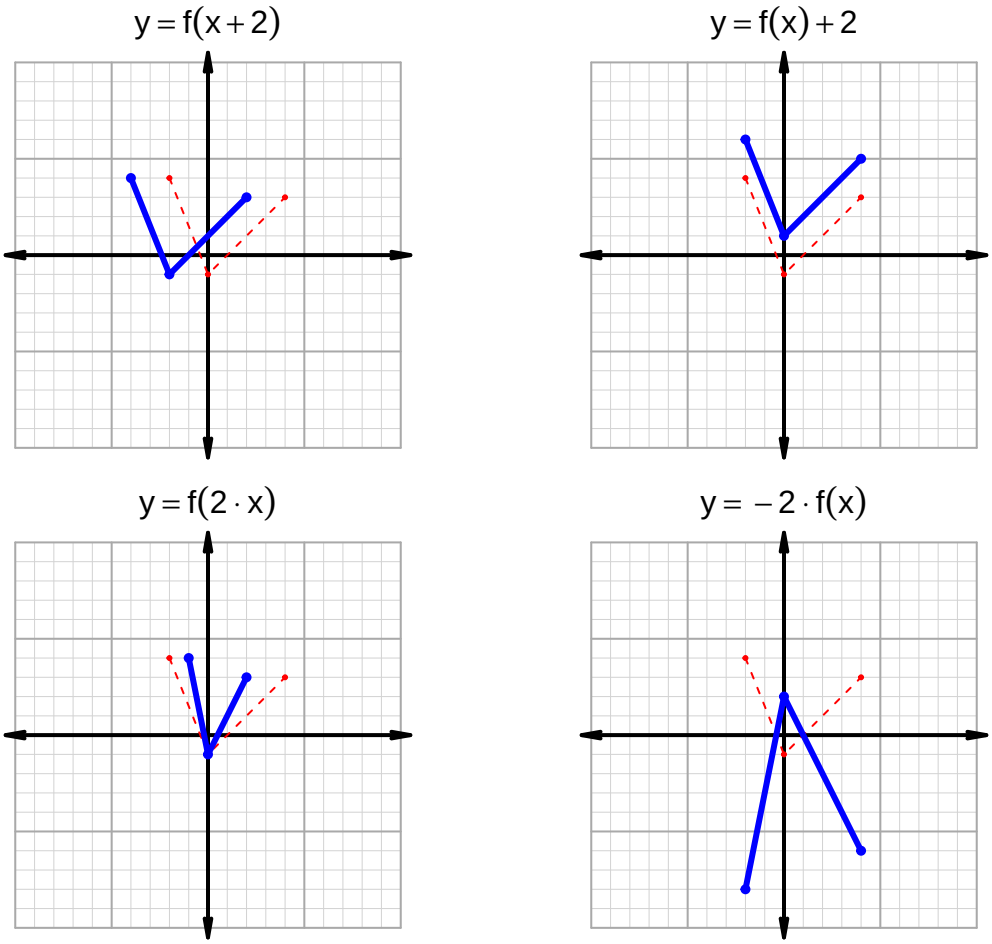
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 21$ and $x_2 = 33$. Express your answer as a reduced fraction.

x	$g(x)$
21	49
33	64
49	33
64	21

$\frac{f(33)-f(21)}{33-21} = \frac{64-49}{33-21} = \frac{15}{12}$

The greatest common factor of 15 and 12 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{4}$$